Waste and Materials Disposition Update from EM's Office of Regulatory Compliance

EM Site-Specific Advisory Board Meeting
September 2009

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Office of Environmental Management

Compliance Status and Strategies

Compliance Status

- DOE operates under 37 Environmental Regulatory Agreements for cleanup
  - For FY 2009, there are more than 160 enforceable milestones
  - For FY 2010, there are more than 130 enforceable milestones
- Recent successes:
  - Resolution, last year, of the long standing legal issues with Idaho on exhumation of buried TRU waste at Idaho National Lab
  - Settlement of lawsuit regarding missed Tri-Party Agreement (TPA) milestones related to the Waste Treatment Plant (pending public comment)
  - Successful renegotiation with Washington of many milestones within the Hanford TPA
  - Successful multi-agency negotiation with NY, EPA and NRC to define terms of future cleanup at West Valley
- Current challenges:
  - Re-negotiating compliance order at Energy Technology Engineering Center (ETEC)

DOE Order 435.1, *Radioactive Waste Management*

- DOE's waste management policy remains unchanged
  - DOE's *Waste Management Programmatic Environmental Impact Statement* and Records of Decision are still valid
- However, nearly a decade has passed since last major revision
- Update planned to address multiple purposes
  - Incorporate lessons learned
  - Institutionalize informal guidance documents
  - Address changes in relevant statutes, regulations, and standards
  - Account for advances in technology
  - Address new and emerging DOE needs
- Progress to date
  - Formed an Integrated Project Team
  - Solicited planning input
  - Initiated Complex-Wide Review to assess waste management activities and to support the update

Performance Assessments & Community of Practice

- Performance Assessments (PAs)
  - Are a LLW disposal requirement under DOE M 435.1-1
  - Evaluate compliance with performance objectives
  - Approved PAs exist for all DOE LLW disposal sites
- Community of Practice
  - Is being implemented via DOE's High-Level Waste Corporate Board
  - Goals/Objectives
    - Promote PA consistency
    - Provide targeted guidance and support
    - Improve sharing of modeling approaches and data
    - Conduct training sessions and workshops
    - Provide framework for enduring PA resource

Oversight and Management Strategies

- DOE is self-regulating in most radioactive waste and materials management; however, efforts are overseen or monitored by other Federal entities
  - The Defense Nuclear Facility Safety Board oversees activities at former defense facilities and provide recommendations, periodically
  - Nuclear Regulatory Commission provides consultation on DOE's implementation of Section 3116 authorities
- EM HQs senior management are directly engaged in approval and implementation of corporate disposition challenges
- EM Chairs the Low-Level Waste Disposal Facility Federal Review Group (LFRG)
  - LFRG provides EM the information necessary to determine that LLW disposal facilities are designed, constructed, operated, maintained, and closed in a manner that protects the public and environment.
- Corporate Boards have been established for each major waste type and are chaired by senior EM managers
  - Tank Waste Corporate Board, TRU Corporate Board, LLW Corporate Board
  - These boards guide strategy decisions and inform policy considerations

Waste Disposition Updates

What's New in HLW…

- Fifty percent of the construction at Hanford's Waste Treatment Plant is complete.
- Update of tank farm infrastructure using ARRA funding.
- Establishment of a new realistic but aggressive schedule for completing waste retrieval from all Hanford's single-shell tanks by 2040 and treating of all tank waste by 2047.
- Newly awarded contracts to address tank waste management and treatment
  - New Tank Operations Contractor at Office of River Protection was awarded May 29, 2008
  - New Liquid Waste Contractor at Savannah River Site assumed responsibility in July 2009

Waste Treatment Plant

What's New in HLW…

- Availability of geologic disposal?
  - Near-term plans are to ensure the safe treatment and interim storage of HLW.
  - EM will assess technical needs and fund R&D to ensure continued safe, cost-effective operations, treatment, and extended storage.
  - EM will develop appropriate strategies to support DOE policy (Blue Ribbon Panel recommendations for storage and disposal alternatives)
- Performance assessment work on tank farms completed at SRS and in process at Hanford
- HLW strategic initiatives under development, led by EM's Office of Engineering and Technology, and supported by EM-10, DOE sites and national labs

One of the two facilities that make up the Interm Salt Disposition Processing System. This one houses the Actinide Removal Process which extracts plutonium, americium, and strontium from radioactive salt waste.

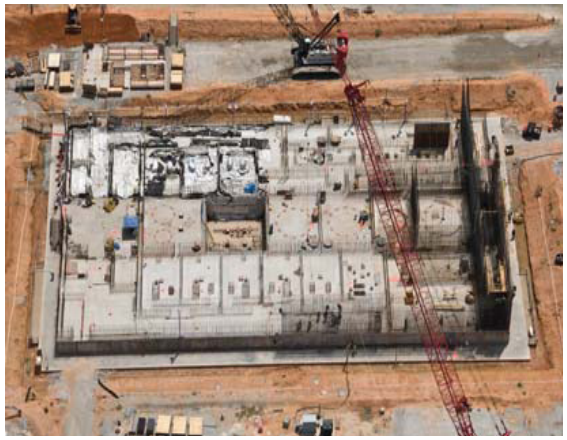
High-Level/Liquid Waste Management

- Waste processing progress continues at Savannah River Site
  - Defense Waste Processing Facility (DWPF) continues to vitrify HLW – 2,785 canisters produced (over 44% complete) & stored in near-surface modular storage structures; 37M gallons remain to be treated
  - MCU operations continue, providing interim salt treatment capabilities
  - Saltstone Disposal facility is operating, processing low activity fraction for onsite disposal
- Waste processing progress continues at other sites:
  - INL - 4,400m^3 of calcine (granular solid) stored in bin sets with a design life of several hundred years.
  - Hanford – 53M gallons of liquid HLW in tanks awaiting treatment
  - West Valley – 275 canisters of commercial origin HLW stored in onsite hot cell (new above-ground storage planned) and managed by EM.

DWPF

High-Level/Liquid Waste Management (cont.)

- Construction continues to provide future treatment capabilities
  - Integrated Waste Treatment Unit under construction at Idaho for treatment of sodium bearing waste (operations to be complete by 2012)
  - Salt Waste Processing Facility (SWPF) (operations to begin in 2014 to replace MCU)
  - Waste Treatment Plant at Office of River Protection (operations to begin in 2019)



Construction of SWPF at SRS - August 09

Transuranic Waste Disposition Update

- Waste Isolation Pilot Plant (WIPP) Summary
  - Ten years of safe operations! (began March 26,1999)
  - Over 62,400 m^3 of defense transuranic waste disposed
  - Completed over 7,700 shipments
  - Over 9M loaded miles traveled.

- Remote-handled (RH) shipments began in Jan 2007
  - Over 276 RH shipments received to date
  - Currently, 6 RH-TRU sites (Idaho National Laboratory, Argonne National Laboratory, Oak Ridge National Laboratory, Los Alamos National Laboratory, Savannah River Site, and General Electric Vallecitos Nuclear Center (began September 2009) have shipped

CH- and RH-TRU Shipments Received at WIPP

Site	Shipments	
Argonne National Laboratory	39	
Idaho National Laboratory	3,615	
Los Alamos National Laboratory	526	
Lawrence Livermore National Laboratory	18	
Nevada Test Site	48	
Rocky Flats Environmental Technology Site	2,045	
Hanford Site	432	
Oak Ridge National Lab	14	
Savannah River Site	1,039	
Total to WIPP	7,776	

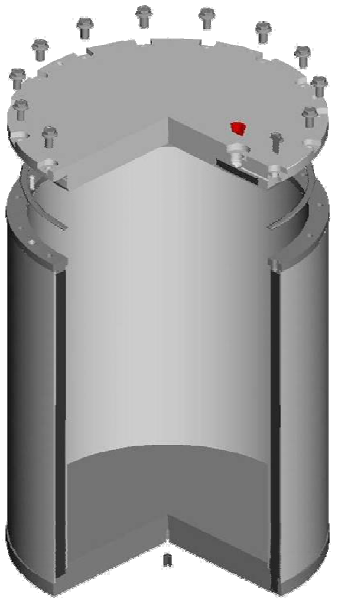
What's New in TRU Waste Disposition

- In March 2008, DOE published a Supplement Analysis and Amended Record of Decision to support optimization of the National TRU Program
  - Limited volumes of both CH- and RH-TRU waste may be sent to Idaho National Laboratory to be treated and characterized prior to shipment to WIPP for disposal.
  - Approximately 2,067 CH-TRU shipments and 188 RH-TRU shipments could move to INL for treatment and characterization
  - **However, DOE will continue to comply with the Idaho Settlement Agreement terms and milestones**
- Implementation of the intersite shipping campaign began in December 2008 with shipment of legacy CH-TRU from NTS to INL, during winter maintenance outage at WIPP

American Recovery and Reinvestment Act will enable acceleration in disposition of CH- and RH-TRU volumes

Packaging and Transportation Innovations will Help Optimize TRU Waste Disposal in the Future

- Use of shielded containers to enable RH-TRU acceleration and improve worker safety.
- Development of TRUPACT-III will enable shipment of oversized containers to be shipped without repackaging.
- Detailed packaging instructions developed for both CH- and RH-TRU to increase certification rates and reduce need for future repackaging.



Summary of ARRA TRU Waste Scope

- 25% increase in certification and shipment of waste to WIPP over base program:
- **Support -** disposition of CH- and/or RH-TRU waste at SRS, Hanford, INL, ORNL, ANL
- **Support-** disposition of CH- and RH-TRU waste from other small quantity sites (SQS) as waste becomes available.
  - Certify GEVNC RH- and CH-TRU and ship RH-TRU mid-September
  - Consolidate ANL, GEVNC, LBNL, LLNL NRD, SNL CH-TRU at INL
- **Provide/Perform -** additional visual examination at ORNL to support accelerated shipment of RH and CH TRU
- **Perform -** CCP certification and packaging for SQS shipments to INL
- **Establish -** large box characterization/certification program at SRS
- **Establish -** a CCP at Hanford to support certification of TRU waste
- Increased RH-TRU waste handling capability at WIPP to support average of 6 RH shipment/receipt rate
- Four additional carrier teams, enabling average weekly rate of 30 CH-/5 RH-TRU WIPP shipments

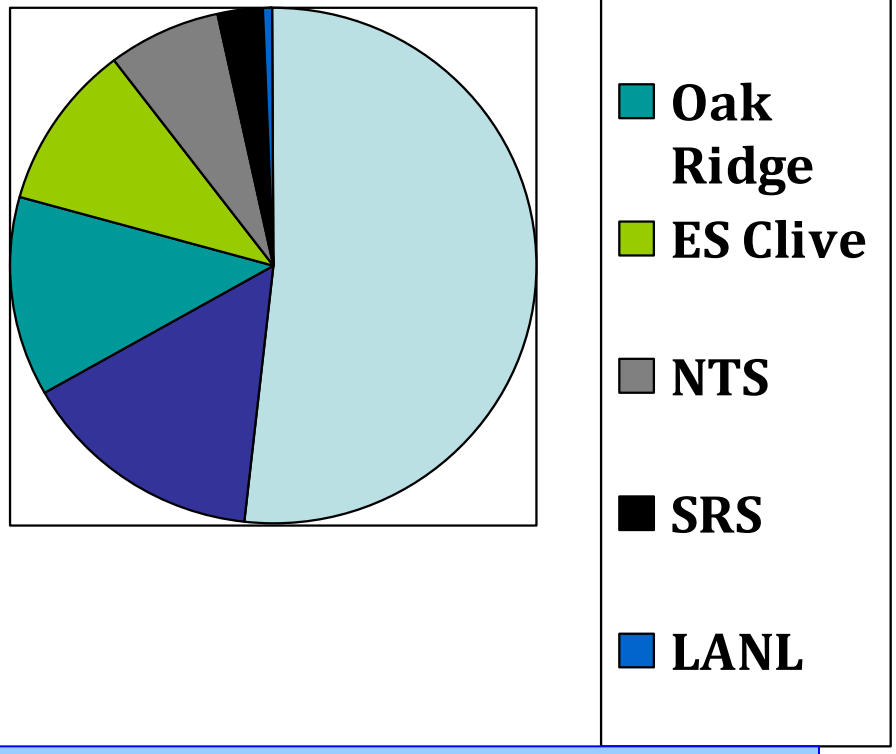
LLW/MLLW Retrospective

- **Historically, most (88%) LLW/MLLW disposed of in U.S. was generated by DOE activities**
  - FY1990-FY2008, approximately 9.6 million m^3 of DOE wastes disposed
  - In the same period, 1.3 million m^3 of non-DOE LLW/MLLW was disposed in commercial facilities
- **Most DOE generated LLW/MLLW results from decommissioning and site cleanup activities**
  - FY1990-FY2008, about 70% was disposed onsite where generated, with 10% at other DOE sites and 20% at commercial facilities

Most DOE LLW/MLLW is Derived from Decommissioning and Site Cleanup Activities

DOE disposed nearly ½ million cubic meters of LLW and MLLW in fiscal year 2008

- 77% disposed on-site in DOE CERCLA disposal facilities
- 12% disposed onsite in DOE non-CERCLA facilities
- 11% disposed commercially (Energy*Solutions* Clive Facility)



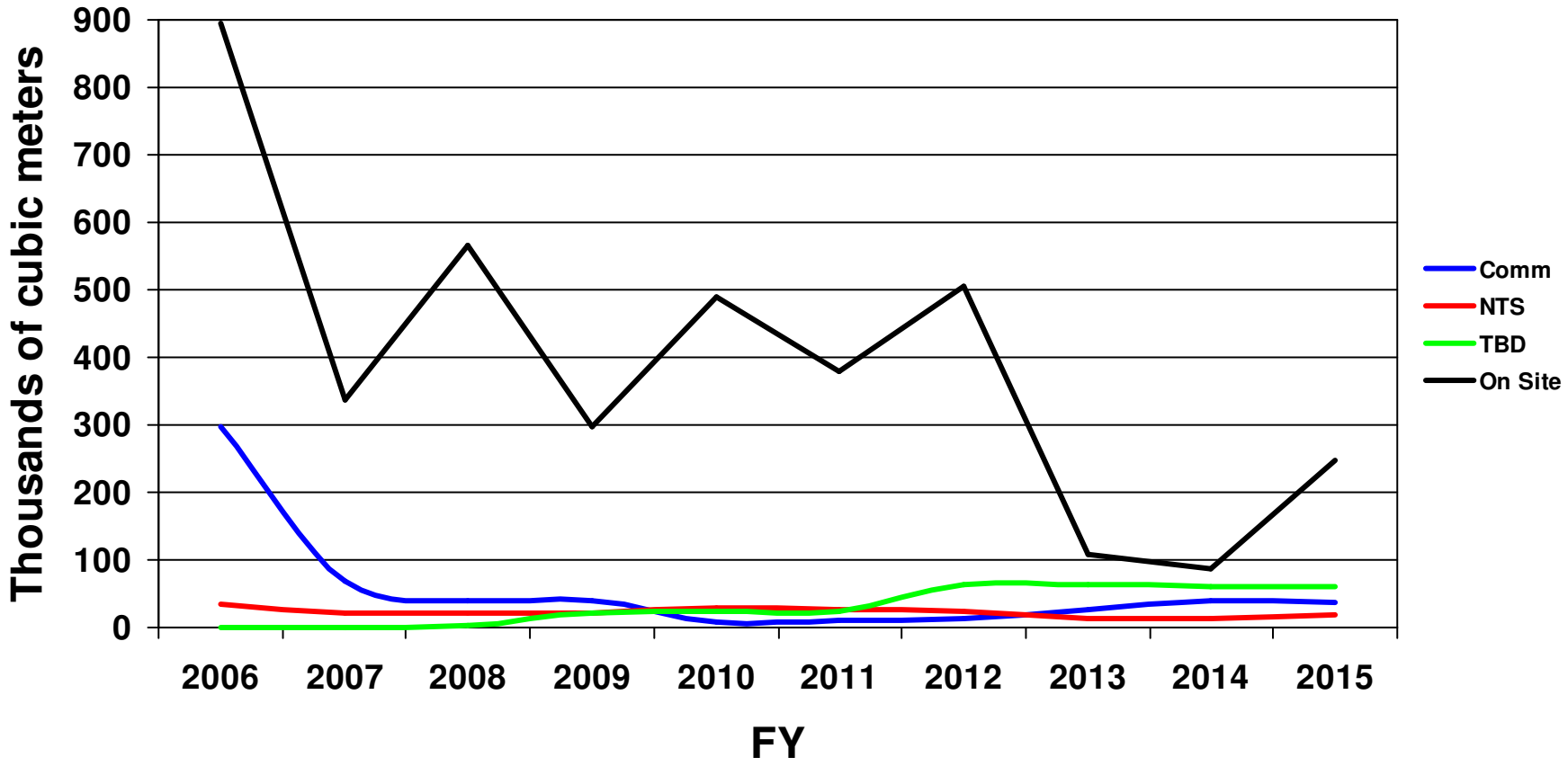
Commercial disposal treatment and disposal facilities are very valuable partners in the DOE cleanup mission.

DOE LLW/MLLW Forecast

- DOE updates its life-cycle LLW/MLLW forecasts annually and makes this information publically available in the Waste Information Management System (WIMS)
- Latest update estimates nearly 2.2 million m^3 of LLW/MLLW will be generated FY2009-2015
  - Vast majority targeted to be disposed on site
  - DOE plans to continue use of Nevada Test Site and, as appropriate, commercial disposal
  - Some uncertainty exists on future disposal capacity for higher activity MLLW

WIMS can be found at http://wims.arc.fiu.edu/WIMS

Annualized LLW/MLLW Forecasts



LLW/MLLW Waste Disposition Update

- Efforts continue to preserve critical disposal capacity
  - DOE and State of Nevada continue to work to resolve long-standing legal concerns regarding Nevada Test Site (NTS) land withdrawal and authority for disposal operations
    - DOE has agreed to a new NTS site-wide EIS
    - Consultations between DOE and the Department of Interior have been concluded
    - A revocation and relinquishment process for 732 acres of Area 5 at NTS to resolve the land withdrawal issue is underway
  - The developing *Tank Closure and Waste Management EIS* for the Hanford Site will evaluate future use of Hanford as regional disposal facility, consistent with Court Settlement
    - Off-site shipments to Hanford remain suspended

Greater-Than-Class C LLW Disposal

- Disposal alternatives being evaluated include:
  - Deep geologic disposal at WIPP
  - Enhanced near surface (ENS) trench disposal at Hanford, INL, LANL, NTS, ORR, SRS, WIPP, WIPP vicinity, and generic commercial locations
  - Intermediate depth borehole location at the same ENS locations, except SRS and ORR
  - Above-ground vault at all locations
- Preliminary Draft EIS has been completed and is undergoing internal review.
- Goal is to issue Draft EIS in 2010 and Final EIS in 2011
- Before issuing ROD, DOE must submit a Report to Congress on disposal alternatives and wait Congressional action

Extensive coordination required on GTCC EIS

- EPA Cooperating Agency; NRC Commenting Agency
- Tribal Nations (formal consultation process developed) – Tribes developing narrative text (NTS, LANL, Hanford)
- Industry (waste inventory and operating experience)
- Other Stakeholders, including Advisory Boards and NGOs
- Other DOE EISs
  - Nevada Test Site
  - Hanford Tank Closure & Waste Management EIS
  - West Valley Decommissioning EIS

For additional information on the GTCC EIS visit http://www.gtcceis.anl.gov/

Materials Disposition Update

What's New: EM's New Mercury Management Project

- *The Mercury Export Ban Act of 2008* requires DOE to provide storage and long-term management of mercury (non-radioactive) generated in the U.S.
  - Responsibility for site(s) selection has been assigned to EM, with EM-10 lead; undertaking NEPA Environmental Impact Statement (EIS).
  - Once operational the Office of Legacy Management will be responsible for the management of the facility
- Critical Milestones Required by Statute
  - DOE issues procedures and standards – 10/01/09
  - DOE designates mercury storage facility(ies) – 01/01/10
  - Mercury storage facility ready to accept mercury – 01/01/13
  - Ban on export of mercury from U.S. effective – 01/01/13
  - DOE mercury storage facility operating under RCRA permit – 01/01/15

What's New: EM's New Mercury Management Project (cont.)

- Current Status
  - Notice of Intent (NOI) was published July 2, 2009
  - Public meeting held at eight locations during July and August 2009
  - Public comment period closed on August 24, 2009
- Sites being analyzed in the EIS are at Hanford (WA); INL (ID); Grand Junction (CO); Hawthorne (NV); SRS (SC), Andrews (TX); and Kansas City (MO).
- Pursuing an aggressive schedule on EIS.
- Expect the Draft Mercury EIS to be published in December 2009.
- Final EIS expected Summer of 2010.
- Final Record of Decision and selection of the mercury storage site(s) expected Fall 2010.

Nickel Sales

- **DOE is evaluating disposition of ~15,300 tons of classified nickel recovered from uranium enrichment process equipment.**
- **DOE plans to pursue a strategy to declassify and decontaminate the nickel, then sell it to a qualified bidder that will alloy, fabricate, then manufacture the nickel into a product that can be used in a radiologically-controlled application.**
  - Nickel would remain controlled throughout the disposition process; it will not be "released" into unrestricted commerce.
- Draft RFP issued July 21, 2009. The comment period ended September 15, 2009.

Nickel Sales (cont.)

- **Stringent perpetual property/radiological control requirements are major concerns of stakeholders (e.g., MIRC, environmental groups)**
  - Technically there is no need for such controls; i.e., IAEA limits are met
- **Regulatory (NRC/DOE) and administrative controls required on the follow-on alloying, fabrication, and/or equipment manufacturing of the nickel (or nickel alloy)**
- **Cradle-to-Grave administrative control must be documented throughout the disposition process**
  - Perpetual inventory and chain-of-custody control for initial contractor/buyer and subsequent recipients
  - Activity and inventory reporting & tracking, verification (via audits of quantity, condition, & records), and enforcement (e.g., performance bond) required
  - After its intended use, final product will be disposed at regulated facility
- **The Secretarial Moratorium/Suspension has not been lifted**
  - January 12, 2000, Moratorium prohibits unrestricted release of volumetrically-contaminated metal into commerce
  - July 13, 2000, Suspension prohibits unrestricted release of all scrap metals from DOE radiological areas into commerce

Excess Uranium Inventory Management Plan – Path Forward

- An environmental assessment was performed to complete the NEPA requirements necessary to support plan activities.
- On August 13, 2009. the Secretary of Energy announced a 4-year plan to barter/exchange excess uranium for services.
- An independent market analysis is in process to assess the impact on the Uranium markets of the Secretarial decision.
- Value of the bartered uranium will be based upon an average of the three market indices tracking uranium prices.
- Upon completion of the Secretarial Determination in accordance with Sec 3112 of the Privatization Act, DOE/EM will modify the Cold Shutdown Contract with USEC and, subsequently, award a competitive cleanup contract for the remediation and dismantlement of the Portsmouth Gaseous Diffusion plant in Piketon, Ohio.
- A revision to the Excess Uranium Inventory Management Plan will reflect these latest decisions by the DOE.

Conclusion

- EM has 20 years of progress and experience in safely managing radioactive wastes and nuclear materials.
  - We solve problems that once seemed unsolvable.
- DOE missions and many U.S. initiatives rely on the DOE waste management system.
  - Commercial industry plays a significant role in DOE's waste management system.
- A strong partnership with our regulators, stakeholders and industry is required to maintain and support the DOE waste and materials disposition system.
- The *American Recovery and Reinvestment Act* will result in accelerated cleanup and increased waste and materials disposition challenges.
- EM's Office of Regulatory Compliance, though its ongoing and planned initiatives, is poised to support these activities.

Background Slides

Natural Resource Damage Assessment Updates

DOE Natural Resource Damages Program

Overarching Policy

- Integration of Natural Resource Concerns into Cleanup Activities
  - For example:
    - ✓ Extensive site restoration at Fernald during remediation
    - ✓ Preservation of native fauna along the Peconic River at Brookhaven
    - ✓ Restoration of native habitat at Weldon Spring
- Cooperation with Co-Trustees
  - For example:
    - ✓ Cooperative assessments underway at LANL, Hanford, Brookhaven and Oak Ridge
    - ✓ Cooperative process recently initiated at Weldon Spring
    - ✓ Regular communications with Co-Trustees at Savannah River and Idaho
    - ✓ Restoration planning underway at Fernald and Rocky Flats

NRDA Program Staffing Integrated Team Approach

- **Policy and Legal Issues**
  - Reside with DOE General Counsel and EM (specifically EM Office of Regulatory Compliance), in concert with Program Senior Officials of the site landlords and Department of Justice, as appropriate
  - Field offices responsible for policy implementation, staffing and management of NRD process, including participation on trustee councils
  - Site-specific policy issues generally addressed jointly by EM, PSO, and field managers
  - Site-specific legal issues addressed jointly by EM, PSO, HQ-GC, Field Counsel and DOJ (as appropriate)
- **Technical Issues**
  - Reside with field manager and field technical staff
  - Consult with EM and PSO
- **Funding**
  - Generally provided from site cleanup budget
  - Requires an adequate link between NRDA activities and remedial actions

NRDA Case Studies

- No One Size Fits All - approach has varied by site, as dictated by site-specific characteristics and the interests and priorities of DOE's Co-Trustees

  - Hanford and LANL undergoing formal injury assessment and integration
    - At LANL, two State agencies disagree over priorities and funding

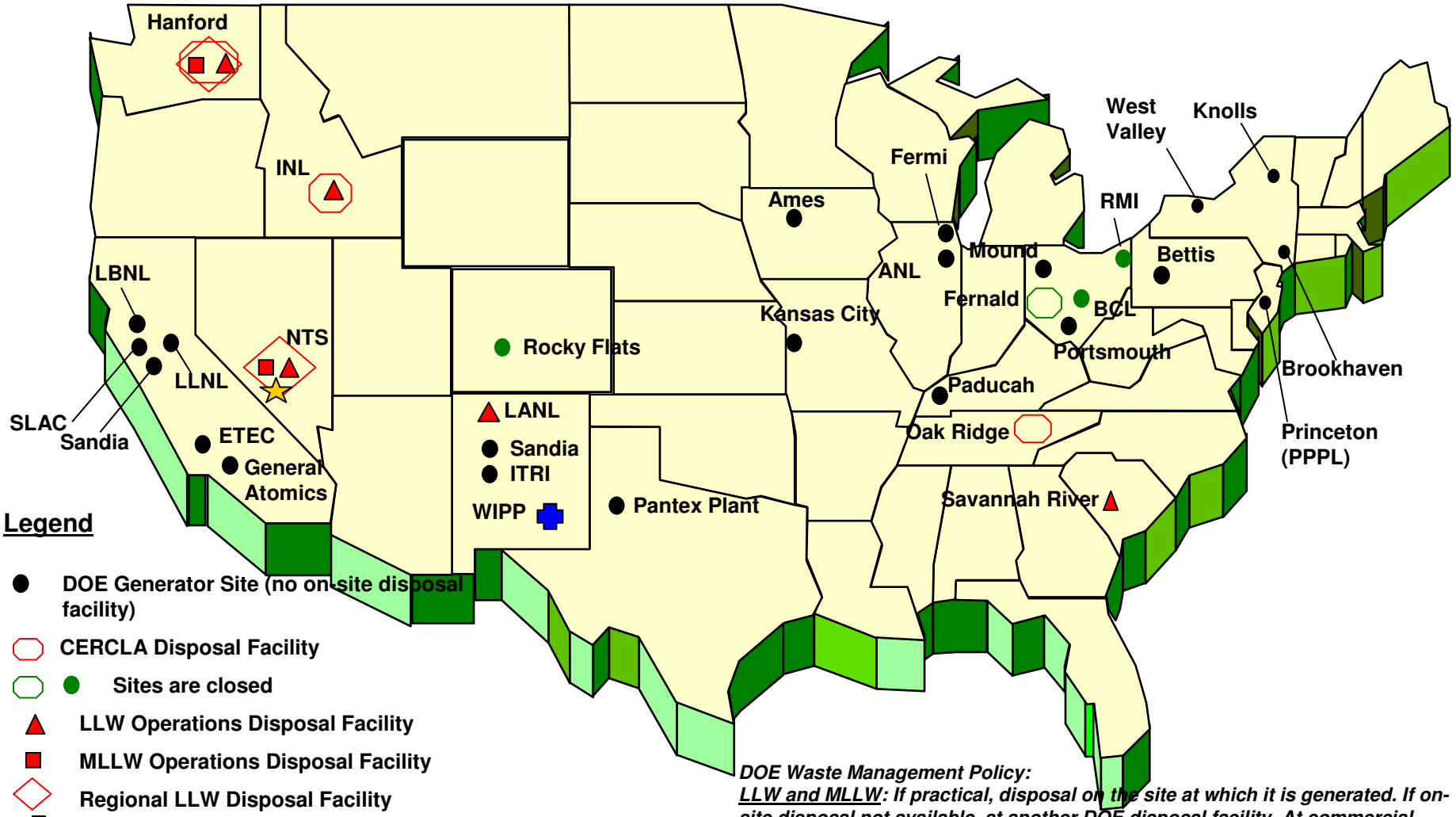
  - Brookhaven and Weldon Spring undertook successful integration during environmental remediation; with remedy completion, further integration is precluded.

  - Rocky Flats settled by legislation – straight to restoration planning

  - Oak Ridge settlement reached through resource swap

  - Fernald underwent extensive integrated restoration, successfully narrowing final claim

DOE's Waste Disposal Complex



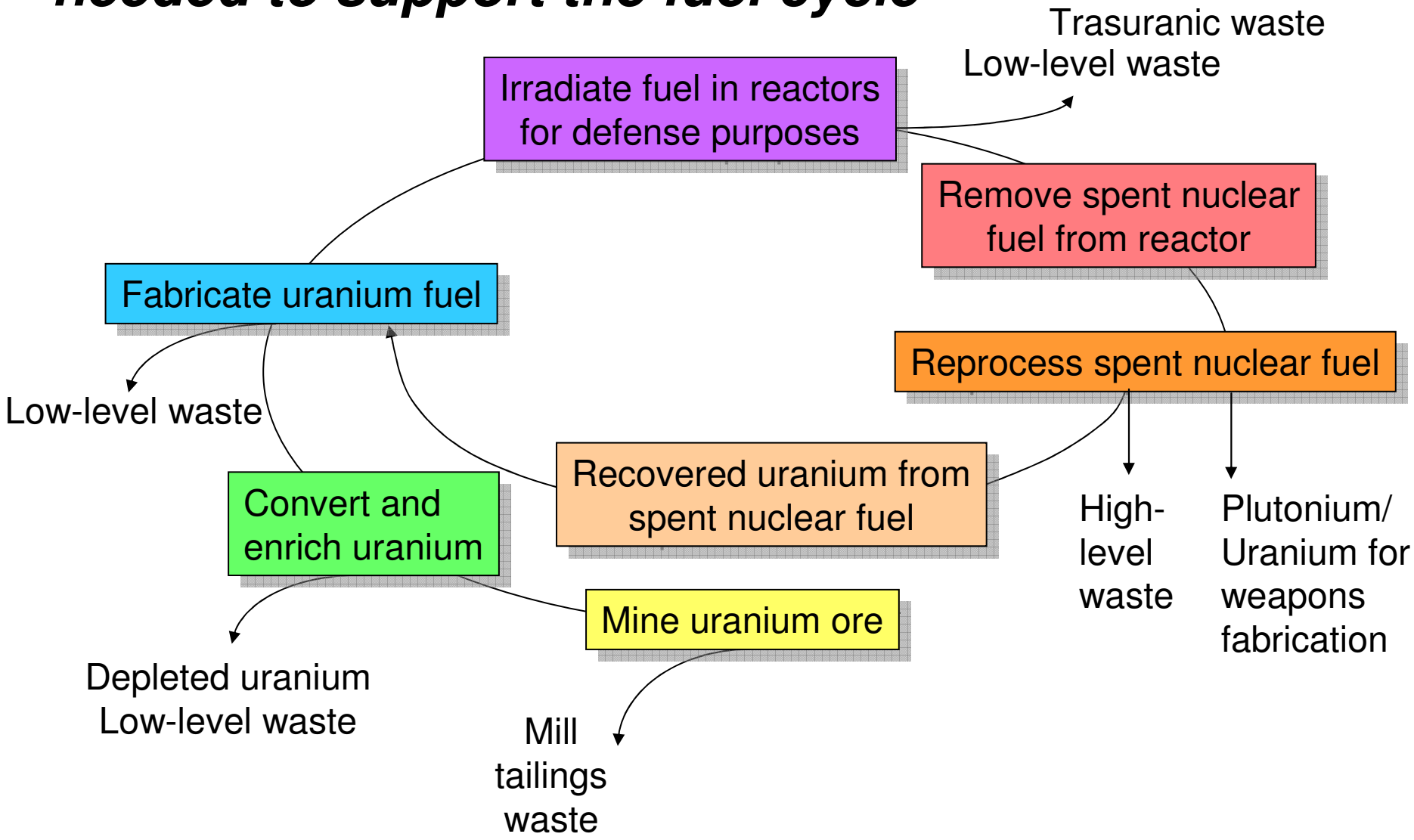
Legend

- DOE Generator Site (no on-site disposal facility)
- CERCLA Disposal Facility
- Sites are closed
- LLW Operations Disposal Facility
- MLLW Operations Disposal Facility
- Regional LLW Disposal Facility
- Waste Isolation Pilot Plant (WIPP) for TRU disposal
- Yucca Mountain Repository for HLW/SNF Disposal

DOE Waste Management Policy:
LLW and MLLW: If practical, disposal on the site at which it is generated. If on-site disposal not available, at another DOE disposal facility. At commercial disposal facilities if compliant, cost effective, and in best interest of the Department
TRU waste: If defense, disposed at Waste Isolation Pilot Plant, New Mexico. If non-defense, safe storage awaiting future disposition
HLW and SNF: Stabilization, if necessary, and safe storage until geologic disposal is available

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

A comprehensive waste management system is needed to support the fuel cycle



FY 2009 TRU Waste Shipping Goals

Generator Site	No. of Contact-Handled TRU Shipments	No. of Remote-Handled TRU Shipments
Argonne National Laboratory		32
Idaho National Laboratory	674	48
Los Alamos National Laboratory	115	16
Oak Ridge National Laboratory	34	35
Savannah River Site	154	46
GE Vallecitos, CA		17
TOTAL TO WIPP	**977**	**194**
INTERSITE TO INL		
Nevada Test Site	17	
GE Vallecitos	1	

DOE LLW/MLLW Management-Related Concerns

- Uncertainty in availability of future disposal capacity.
- Potential challenges and changes to DOE policies and strategies.
- Increasing inquiries from outside DOE for access to DOE low-level and mixed low-level waste facilities, due to changing circumstances.
- Increasing costs due to growing scope and market conditions.

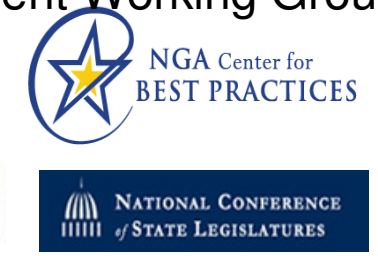
American Recovery and Reinvestment Act will generate additional DOE LLW/MLLW, increasing treatment and disposal needs across the complex

Nickel Sales (cont.)

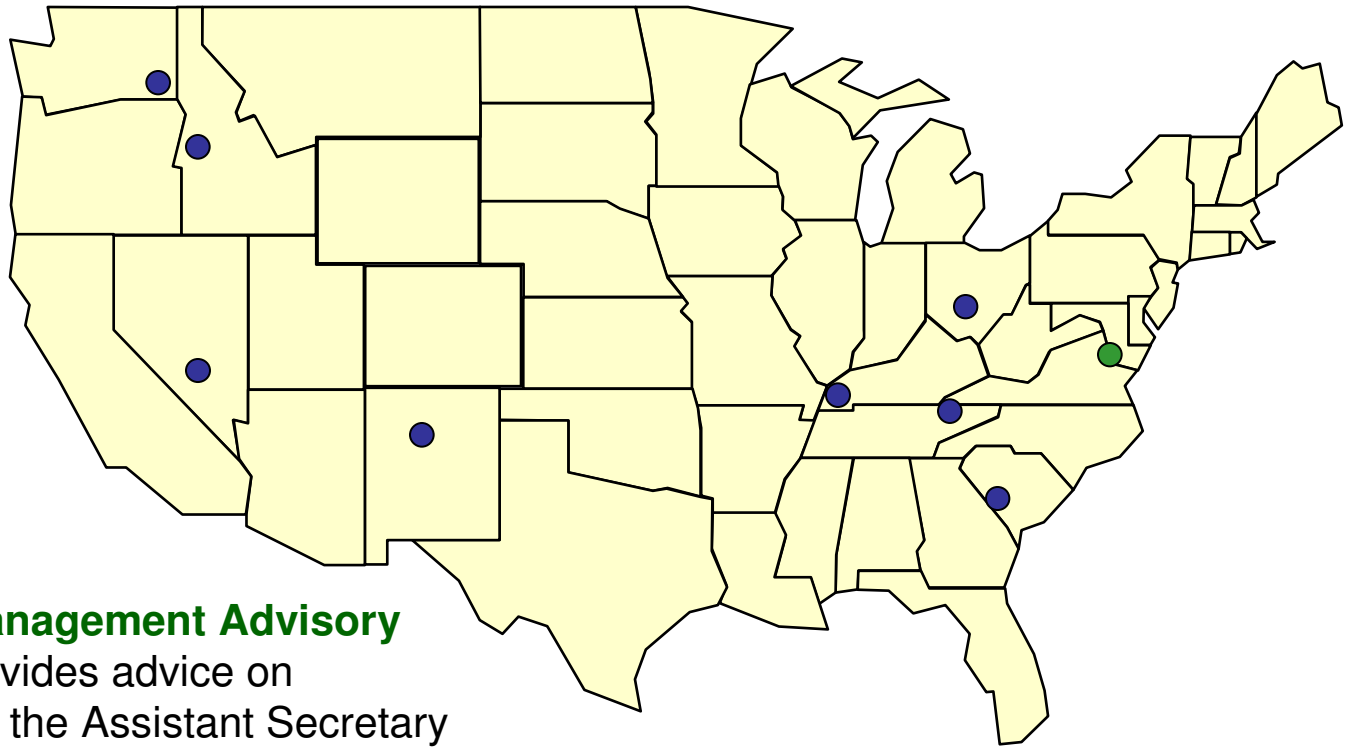
- **The contractor/buyer must have all necessary licenses, permits, meet all requirements, and comply with the law**
- **All facility construction and licensing costs are responsibility of the buyer**
- **Nickel must be declassified and decontaminated by facility(ies) which must be licensed by the NRC or an Agreement State, or under DOE's authorization**
- **Stringent "defense in depth" requirement must be met: decontaminated nickel must meet IAEA clearance levels prior to title transfer for alloying, manufacturing, and end-use of nickel**
  - Ensure that radiation doses and environmental impacts are kept as low as reasonably achievable

Intergovernmental Groups

- When major changes in policy direction are contemplated by the Department, EM facilitates communication of these changes to a wide range of interested (and affected) parties
- EM supports these National intergovernmental organizations through grants and cooperative agreements:
  - Energy Communities Alliance (ECA)
  - National Association of Attorneys General (NAAG)
  - National Governors Association (NGA)
  - National Conference of State Legislatures (NCSL)
  - Environmental Council of the States (ECOS)
  - State and Tribal Government Working Group (STGWG)



EM Federal Advisory Committees



- **Environmental Management Advisory Board (EMAB)** provides advice on corporate issues to the Assistant Secretary
- **Environmental Management Site-Specific Advisory Board (EM SSAB)** provides advice on site-specific and cross-complex issues to the Assistant Secretary and the Field managers or Assistant Managers for EM activities at Hanford, Idaho, Nevada, Northern New Mexico, Oak Ridge, Paducah, Portsmouth, and Savannah River

Tribal Government Interactions

- EM is committed to ***government-to-government consultation*** with Tribal nations to enhance EM decision-making and protect Tribal rights and interests

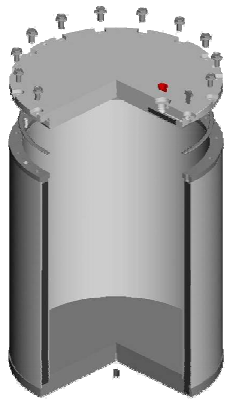
- Drivers
  - DOE American Indian Alaska Native Tribal Government Policy
  - Framework for Implementation of the DOE Tribal Policy
  - DOE Order 144.1

- EM regularly interacts with the Tribal nations around its sites and through the State and Tribal Government Working Group

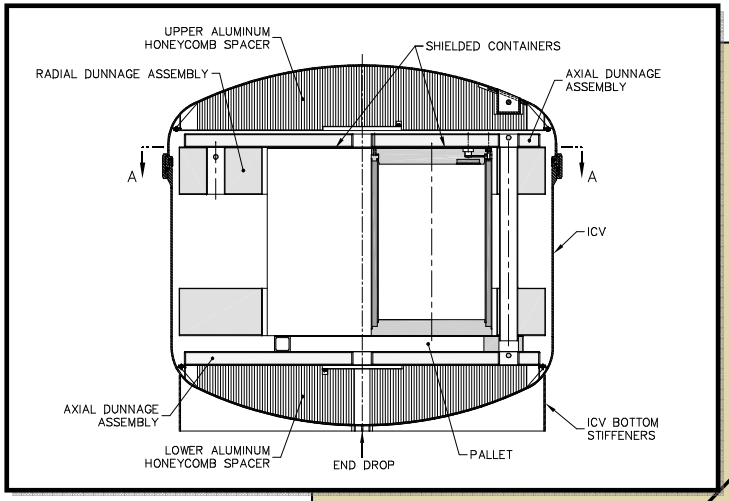
Seneca Nation
Cochiti Pueblo
Jemez Pueblo
Nez Perce
San Ildefonso Pueblo
Santa Clara Pueblo
Yakama Nation
Confederated Tribes of the Umatilla Reservation

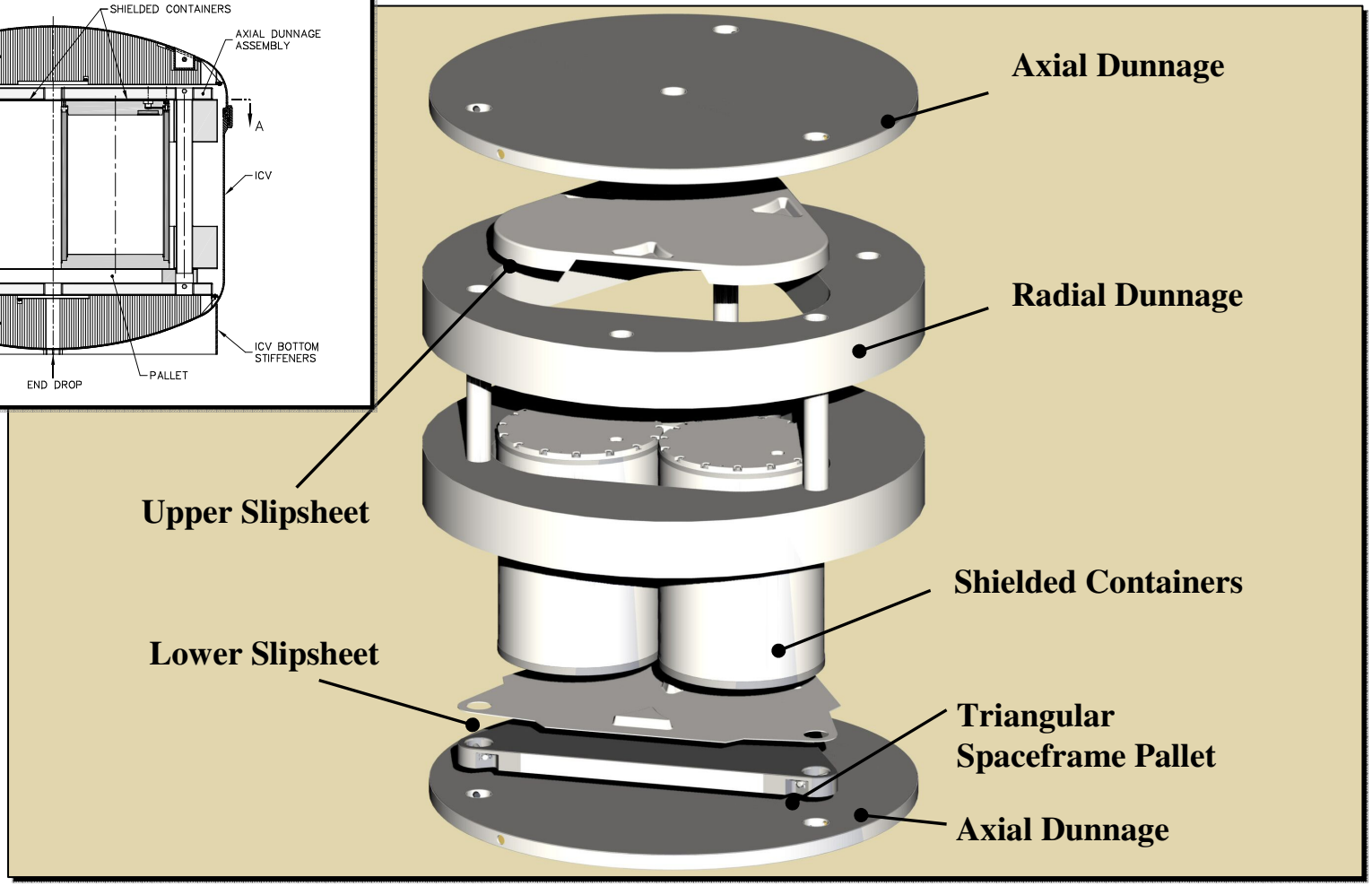
Shielded Containers - A new method planned to ship RH waste to WIPP

- External dimensions = 55-gal drum, internal capacity for a standard 30-gallon drum
- Transport in 3-pack configuration in HalfPACT under current design and licensing bases.
- Handling, storage, and emplacement in 3-pack configuration
- Incorporate into existing CH-TRU waste handling infrastructure – count as RH-TRU waste
- Shielded containers will significantly reduce the number of RH-TRU waste shipments to WIPP.



Shielded Container Shipping Configuration

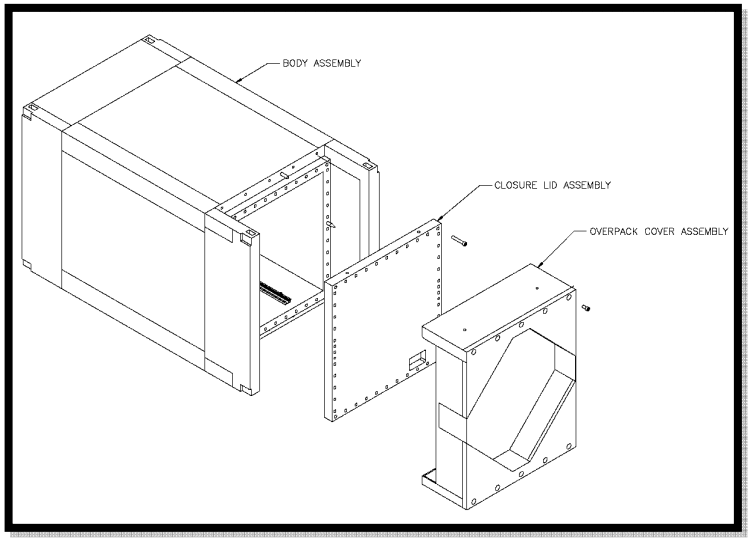




Radial Shock Absorber to be used with Shielded Containers

TRUPACT-III

- Rectangular transportation container
  - 8'2 x 8'8"x 19'.10.5" integrated shell with 5 different layers- high strength stainless
  - For use with large box waste to eliminate repackaging
  - Approximately 25% of DOE TRU waste in large boxes
  - Must meet NRC Type B requirements
  - NRC currently reviewing application
  - Retesting at Sandia in October followed by SAR submittal in November 2009



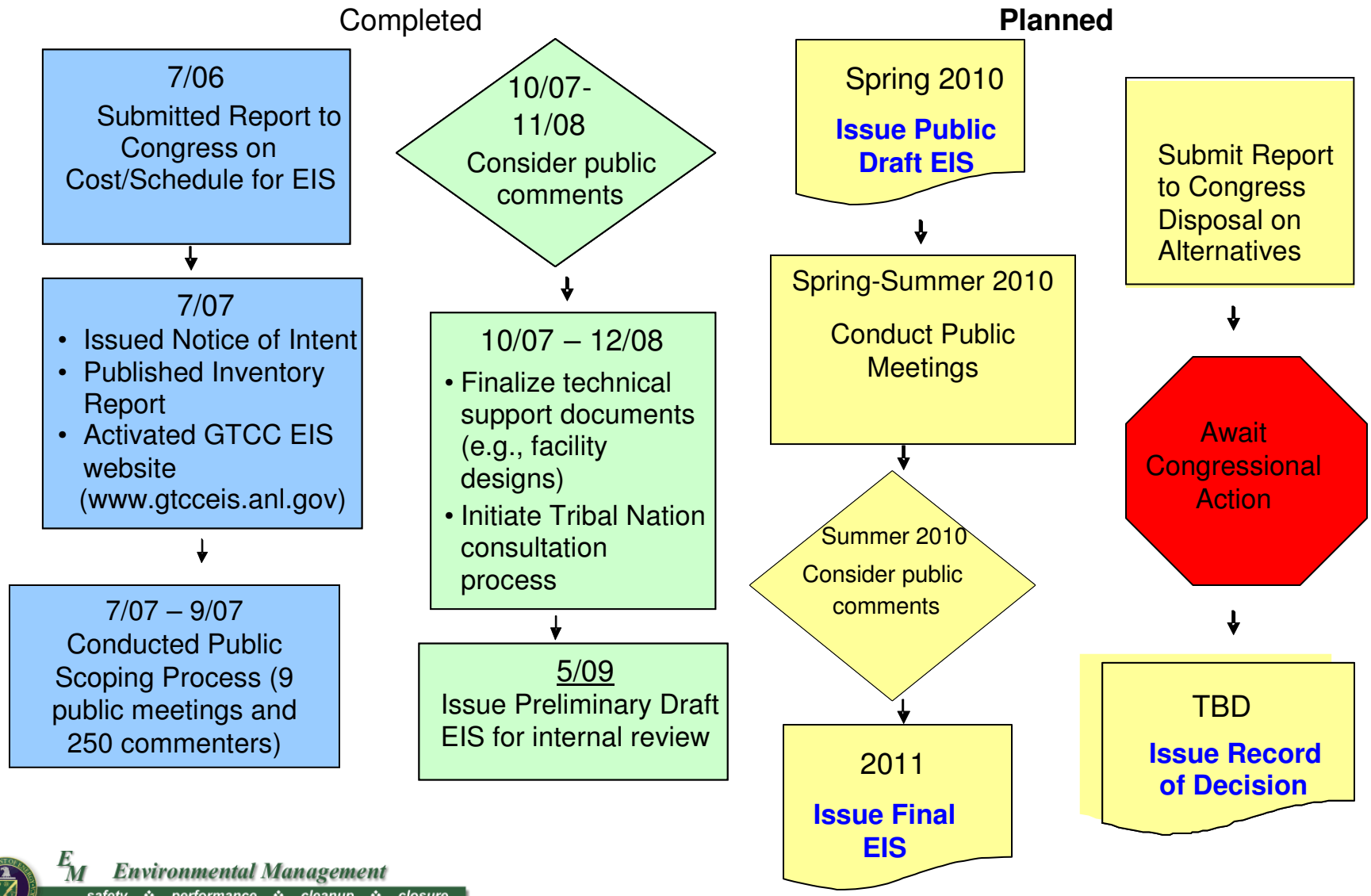
Disposal Alternatives Evaluated in GTCC EIS

Alternative	Location
1. No action	Continued storage consistent with ongoing practices
2. Geologic Repository	Waste Isolation Pilot Plant (WIPP)
4. Enhanced Near Surface (trench/vault) ORR (vault only)	Hanford, Idaho National Laboratory (INL), Los Alamos National Laboratory (LANL), Nevada Test Site (NTS), Oak Ridge Reservation (ORR), Savannah River Site (SRS), WIPP, WIPP Vicinity, and generic commercial
5. Intermediate Depth Borehole	Hanford Site, INL, LANL, NTS, WIPP Vicinity, and generic commercial

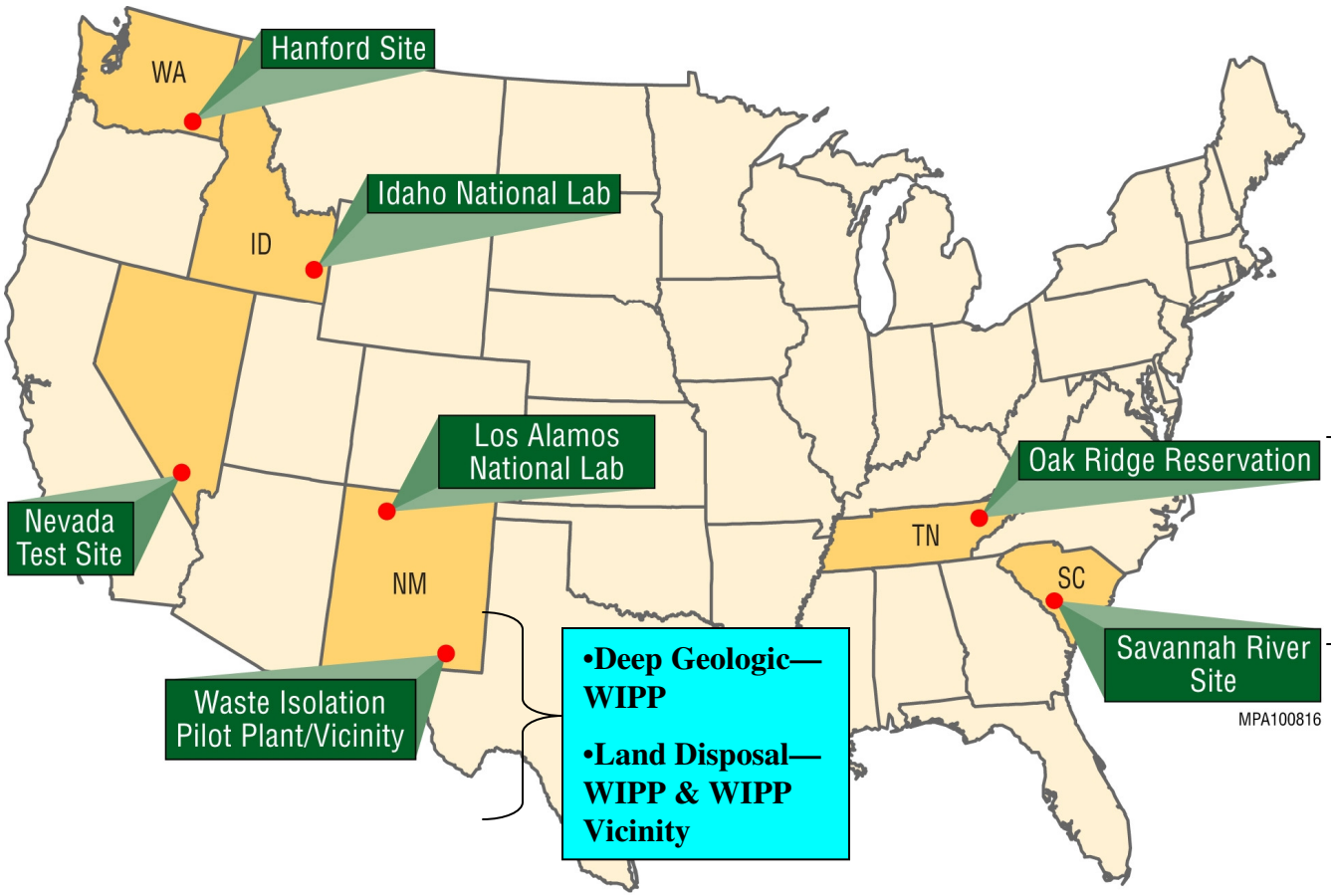
Remarks

- EIS will identify whether legislation or regulatory modifications that may be needed to implement any of these alternatives
- Combination of alternatives may be feasible
- EIS being structured so that decisions can be made on a waste stream-by-waste stream basis

Status of GTCC EIS Activities



GTCC Proposed Disposal Sites



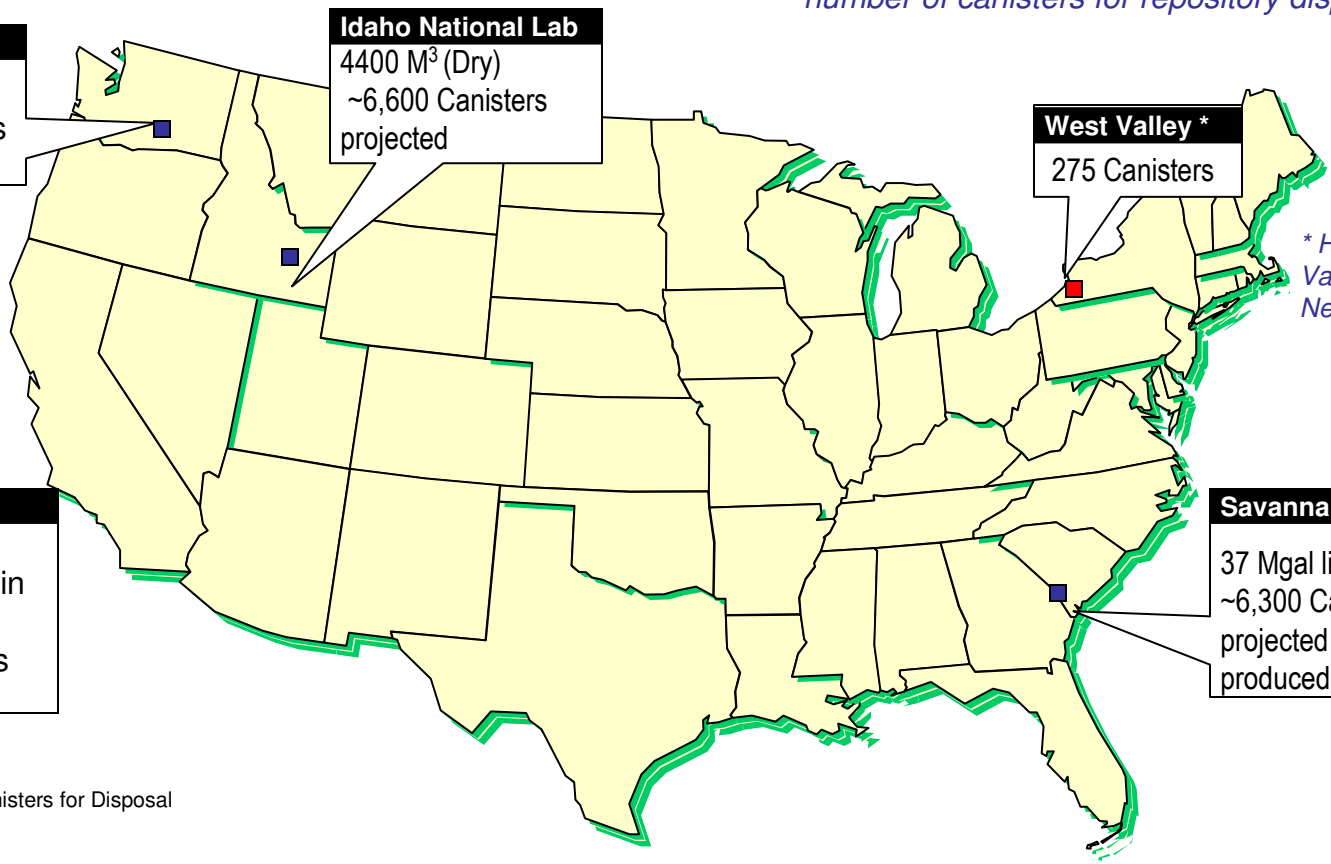
Due to shallow ground water table

Oak Ridge Above Ground Vault

Savannah River Trench and Above Ground Vault

Locations/Quantities of HLW

2009 inventory of HLW and the projected number of canisters for repository disposal.



Hanford Site
53 Mgal liquid
~9,700 Canisters projected

Idaho National Lab
4400 M^3 (Dry)
~6,600 Canisters projected

West Valley *
275 Canisters

** HLW at West Valley is owned by New York State.*

Total
90 Mgal liquid
~3,100 Canisters in storage
~23,000 Canisters projected

Savannah River Site
37 Mgal liquid
~6,300 Canisters projected (~2,800 produced)

Mgal – Million gallons
Canisters – HLW Canisters for Disposal

Locations/Quantities of SNF

MTHM - Metric Tons Heavy Metal

Canisters – DOE Standardized Canister